

The relations between principal eigenvalue of the Laplace operator in a domain Ω , with Dirichlet boundary conditions, and torsional rigidity, that is $\int_{\Omega} u dx$ where u solves $-\Delta u = 1$ in Ω with zero trace on the boundary, are studied in the class of general domains, convex domains, and domains with a small thickness. This is of help to provide some bounds for the Blasche-Santaló diagram of the two quantities. This is an ongoing research with Michiel van den Berg (Bristol) and Aldo Pratelli (Pisa).